



Relationships built on trust



Gamcorp (Melbourne) Pty Ltd A.C.N 141 076 904 A.B.N 73 015 060 240
www.gamcorp.com.au Email: melbourne@gamcorp.com.au
35 Butler Street, Richmond VIC 3121 Tel: 03 9543 2211

Our Ref: 9981-03-03(RE8726-01-03) /JD
4 July 2021

Tradezone Pty Ltd (Brand Name: Powerwave)
PO Box 3137, Helensvale
QLD 4212

PV Array Frame Engineering Certification

RE: AS/NZ 1170.2 Certification for Flush Mounted System on Lysaght Longline 305 (Concealed Fix Roof)

Gamcorp (Melbourne) Pty Ltd, being Structural Engineers within the meaning of Australian Building Regulations, have carried out a structural design check of Flush Mounted System on Lysaght Longline 305 (Concealed Fix Roof) within Australia. The design check is based on the information and test reports provided by Tradezone Pty Ltd.

For a definition of a **lapped joint** in the roof sheeting, please see **Figure 1**.

This certificate is **only valid** for Flush Mounted System on Lysaght Longline 305(Concealed Fix Roof) itself. The roof structure or the building structure and PV panels shall be assessed separately and accordingly.

This certificate is **only valid** when roof clamp fixing to the **lapped joints** of roof sheeting on top of the purlins. If the fixing condition is different from those conditions, interface spacing shall be reviewed and validated.

This certificate is **only valid** as a whole. Any information extracted from this certificate is not valid if standing alone.

We find the Installation of Flush Mounted System on Lysaght Longline 305 (Concealed Fix Roof) for Australian use to be structurally sufficient based on the following conditions:

- Wind loads to AS/NZ1170.2:2011(R2016) Wind actions
- Wind region **A, B, C, D**
- Wind terrain category **2 & 3**
- Wind average recurrence interval of **200 years**
- Maximum building height **20m**
- The maximum assessed PV panel dimensions are **1670mm x 1000mm, 1970mm x 1000mm, 2100mm x 1050mm, 2200mm x 1200mm, 2400mm x 1200mm**
- Weight of the PV panel and array frame to be 15 kg/m²
- Rails to be **MA Rails**
- Roof clamp to be **Mibet Roof Clamp – Longline 305**
- Material of Rails to be **AL6005-T5 UNO**
- Each PV panel to be installed using **2 rails** minimum in all circumstances
- Roof clamps to be fixed only to the **lapped joints** of roof sheeting on top of the purlins (See **Figure 1**)

ISO 9001:2015 Registered Firm
Certificate No: AU1222

Gamcorp (Melbourne) Pty Ltd A.C.N 141 076 904 A.B.N 73 015 060 240
www.gamcorp.com.au Email: melbourne@gamcorp.com.au
35 Butler Street, Richmond VIC 3121 Tel: 03 9543 2211

- No PV panel to be installed within 2xs from edges and ridge. "s" is the maximum gap between the underside of the panel and the roof surface when installed on the roof ($50\text{mm} \leq s \leq 300\text{mm}$)
- Installation of PV panels to be done in accordance with the PV panels installation manual
- The certification **excludes** assessment of roof structure and PV panels

Refer to attached summary table for interface spacing (Unit: mm)

NOTES:

- **The recommended spacing nominated in this certification is based on the capacity of the array frame and the fixing of array frames to the roof, not the roof structure and PV panels. It is the responsibility of the installer to adopt the most critical spacing.**
- **If any of the above conditions cannot be met, the structural engineer must be notified immediately.**
- **The capacity of roof clamp was obtained from test report no. 8524-03/JD, dated 24th July 2020 and provided by Gamcorp (Melbourne) Pty Ltd.**
- **The spacing shown in the interface tables shall be adjusted based on the assessment and requirement of the roof structures.**

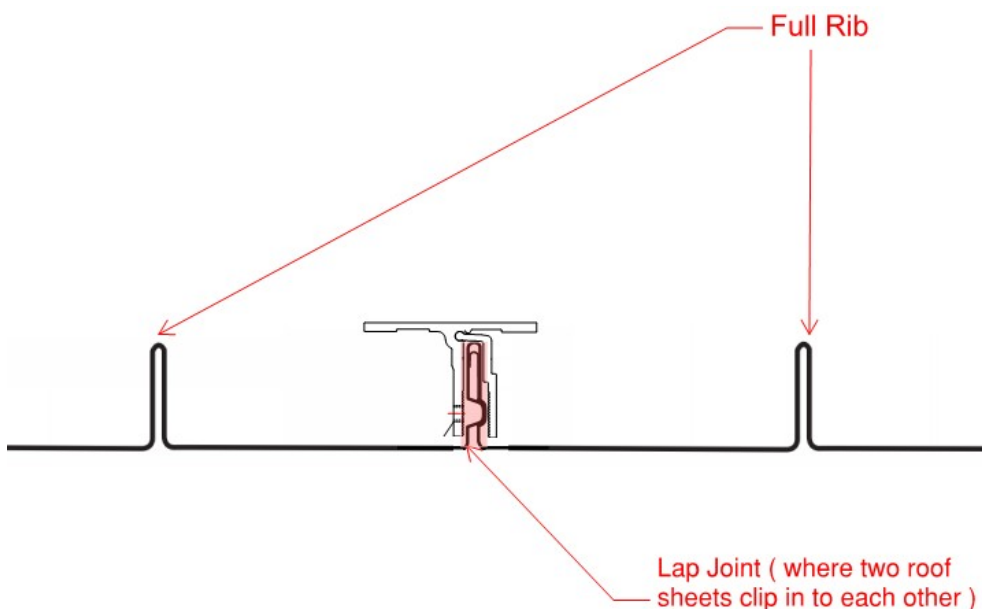


Figure 1 - Lapped Joint Definition



Relationships built on trust



Gamcorp (Melbourne) Pty Ltd A.C.N 141 076 904 A.B.N 73 015 060 240
www.gamcorp.com.au Email: melbourne@gamcorp.com.au
35 Butler Street, Richmond VIC 3121 Tel: 03 9543 2211

Construction is to be carried out strictly in accordance with the manufacturers instructions. This work was designed by **Jiewen Deng** in accordance with the provisions of Australian Building Regulations and in accordance with sound, widely accepted engineering principles. This certificate is only valid till 05/07/2023. Gamcorp should be contacted for future validation. Contact Gamcorp for customised system or if the site conditions are not covered by this assessment.

Yours faithfully,
Gamcorp (Melbourne) Pty Ltd

A handwritten signature in black ink, appearing to read 'L. Van Spaandonk'.

L. Van Spaandonk
Principal Engineer
FIEAust CPEng NER 5038980
NT Registration: 244137ES
QLD Registration: 18703
VIC Registration: EC 45972
TAS Registration: CC7366

Attachments:

- Summary table for interface spacing, Flush mount - Lysaght Longline 305(Concealed Fix Roof)

*ISO 9001:2015 Registered Firm
Certificate No: AU1222*

Structural Design Documentation

Mibet Flush Array Frame System Spacing Table

According to AS/NZS 1170.2-2011 (R2016)

with MA Rail – Lysaght Longline 305

within Australia

Terrain Category 2 & 3

For: Tradezone Pty Ltd (Brand Name: Powerwave)
PO Box 3137, Helensvale
QLD 4212



Job Number: 9981-03-03
Date: 02/07/2021

COPYRIGHT: The concepts and information contained in this document are the property of Gamcorp (Melbourne) Pty Ltd. Use or copying of this document in whole or in part without the written permission of Gamcorp constitutes an infringement of copyright.

LIMITATION: This report has been prepared on behalf of and for the exclusive use of Gamcorp (Melbourne) Pty Ltd's Client, and is subject to and issued in connection with the provisions of the agreement between Gamcorp (Melbourne) Pty Ltd and its Client. Gamcorp (Melbourne) Pty Ltd accepts no liability or responsibility whatsoever for or in respect of any use of or reliance upon this report by any third party.



Relationships built on trust

35 Butler Street
Richmond VIC 3121
Tel: 03 9543 2211
melbourne@gamcorp.com.au
www.gamcorp.com.au
ISO 9001:2015 Registered Firm
Certificate No: AU1222

Job No: 9981-03-03
Client: Tradezone Pty Ltd (Brand Name: Powerwave)
Project: Mibet Flush Array Frame System Spacing Table
with MA Rail – Lysaght Longline 305
Address: within Australia

Australian Standards

AS/NZS 1170.0:2002 – Structural design actions, Part 0: General principles
AS/NZS 1170.1:2002 (R2016) – Structural design actions, Part 1: Permanent, imposed and other actions
AS/NZS 1170.2:2011 (R2016) – Structural design actions, Part 2: Wind actions
AS/NZS 1664.1:1997 – Aluminium structures - Limit state design
AS 4100:2020 – Steel Structures
AS/NZS 4600:2018 – Cold-formed Steel Structures

Wind Terrain Category: WTC 2 & 3

Designed: JD
Checked: AA
Date: Jul-21

**Flush Array Frame System Spacing Table for
 LYSAGHT Longline 305 roof sheeting – mm**

Type of Roof: LYSAGHT Longline 305
 Type of Rail: MA Rail
 Type of Interface: Mibet Roof Clamp Longline 305
 Solar Panel Dimension: 1.67mx1m
 Terrain category: 2

h/d ≤ 0.5* - Refer to Note 5 for definition of h and d.

| Wind Region | Building Height – H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|-------------|----------|------------|------|-------------|----------|-------------|------|-------------|----------|-------------|------|-------------|----------|
| | H ≤ 5 | | | | 5 < H ≤ 10 | | | | 10 < H ≤ 15 | | | | 15 < H ≤ 20 | | | |
| | Corner | Edge | Intermedate | Internal | Corner | Edge | Intermedate | Internal | Corner | Edge | Intermedate | Internal | Corner | Edge | Intermedate | Internal |
| A | 545 | 845 | 1165 | 1855 | 445 | 690 | 940 | 1485 | 405 | 620 | 845 | 1325 | 380 | 585 | 795 | 1250 |
| B | 365 | 560 | 765 | 1195 | -- | 460 | 625 | 970 | -- | 415 | 560 | 870 | -- | 390 | 530 | 815 |
| C | -- | 365 | 490 | 755 | -- | -- | 400 | 615 | -- | -- | 365 | 555 | -- | -- | 345 | 525 |
| D | -- | -- | -- | 480 | -- | -- | -- | 395 | -- | -- | -- | 355 | -- | -- | -- | 335 |

h/d ≥ 1* - Refer to Note 5 for definition of h and d.

| Wind Region | Building Height – H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|-------------|----------|------------|------|-------------|----------|-------------|------|-------------|----------|-------------|------|-------------|----------|
| | H ≤ 5 | | | | 5 < H ≤ 10 | | | | 10 < H ≤ 15 | | | | 15 < H ≤ 20 | | | |
| | Corner | Edge | Intermedate | Internal | Corner | Edge | Intermedate | Internal | Corner | Edge | Intermedate | Internal | Corner | Edge | Intermedate | Internal |
| A | 370 | 570 | 775 | 1215 | -- | 465 | 630 | 980 | -- | 420 | 570 | 880 | -- | 395 | 535 | 830 |
| B | -- | 380 | 515 | 795 | -- | -- | 425 | 650 | -- | -- | 380 | 585 | -- | -- | 360 | 550 |
| C | -- | -- | 335 | 510 | -- | -- | -- | 420 | -- | -- | -- | 375 | -- | -- | -- | 355 |
| D | -- | -- | -- | 325 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

*For intermediate values of h/d ratios, linear interpolation shall be used.
 *Refer to Note 7- Figure 2 for roof zone definition.

**Flush Array Frame System Spacing Table for
 LYSAGHT Longline 305 roof sheeting – mm**

Type of Roof: LYSAGHT Longline 305
 Type of Rail: MA Rail
 Type of Interface: Mibet Roof Clamp Longline 305
 Solar Panel Dimension: 1.67mx1m
 Terrain category: 3

h/d ≤ 0.5* - Refer to Note 5 for definition of h and d.

| Wind Region | Building Height – H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|-------------|----------|------------|------|-------------|----------|-------------|------|-------------|----------|-------------|------|-------------|----------|
| | H ≤ 5 | | | | 5 < H ≤ 10 | | | | 10 < H ≤ 15 | | | | 15 < H ≤ 20 | | | |
| | Corner | Edge | Intermedate | Internal | Corner | Edge | Intermedate | Internal | Corner | Edge | Intermedate | Internal | Corner | Edge | Intermedate | Internal |
| A | 665 | 1035 | 1430 | 1990 | 665 | 1035 | 1430 | 1990 | 570 | 885 | 1220 | 1895 | 510 | 785 | 1080 | 1720 |
| B | 445 | 680 | 930 | 1470 | 445 | 680 | 930 | 1470 | 385 | 585 | 800 | 1255 | 340 | 525 | 710 | 1110 |
| C | -- | 440 | 595 | 925 | -- | 440 | 595 | 925 | -- | 380 | 515 | 790 | -- | 340 | 455 | 705 |
| D | -- | -- | 380 | 585 | -- | -- | 380 | 585 | -- | -- | 325 | 505 | -- | -- | -- | 450 |

h/d ≥ 1* - Refer to Note 5 for definition of h and d.

| Wind Region | Building Height – H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|-------------|----------|------------|------|-------------|----------|-------------|------|-------------|----------|-------------|------|-------------|----------|
| | H ≤ 5 | | | | 5 < H ≤ 10 | | | | 10 < H ≤ 15 | | | | 15 < H ≤ 20 | | | |
| | Corner | Edge | Intermedate | Internal | Corner | Edge | Intermedate | Internal | Corner | Edge | Intermedate | Internal | Corner | Edge | Intermedate | Internal |
| A | 450 | 690 | 945 | 1495 | 450 | 690 | 945 | 1495 | 385 | 595 | 810 | 1270 | 345 | 530 | 720 | 1125 |
| B | -- | 460 | 625 | 970 | -- | 460 | 625 | 970 | -- | 400 | 540 | 835 | -- | 355 | 480 | 740 |
| C | -- | -- | 405 | 620 | -- | -- | 405 | 620 | -- | -- | 350 | 535 | -- | -- | -- | 475 |
| D | -- | -- | -- | 395 | -- | -- | -- | 395 | -- | -- | -- | 345 | -- | -- | -- | -- |

*For intermediate values of h/d ratios, linear interpolation shall be used.
 *Refer to Note 7- Figure 2 for roof zone definition.

**Flush Array Frame System Spacing Table for
 LYSAGHT Longline 305 roof sheeting – mm**

Type of Roof: LYSAGHT Longline 305
 Type of Rail: MA Rail
 Type of Interface: Mibet Roof Clamp Longline 305
 Solar Panel Dimension: 1.97mx1m
 Terrain category: 2

h/d ≤ 0.5* - Refer to Note 5 for definition of h and d.

| Wind Region | Building Height – H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------------|-----------------|-------------|------------|------------|-----------------|-------------|-------------|------------|-----------------|-------------|-------------|------------|-----------------|-------------|
| | H ≤ 5 | | | | 5 < H ≤ 10 | | | | 10 < H ≤ 15 | | | | 15 < H ≤ 20 | | | |
| | Corner | Edge | Interme date | Internal | Corner | Edge | Interme date | Internal | Corner | Edge | Interme date | Internal | Corner | Edge | Interme date | Internal |
| A | 465 | 715 | 985 | 1575 | 380 | 585 | 795 | 1260 | 340 | 525 | 715 | 1125 | 230 | 495 | 675 | 1055 |
| B | -- | 475 | 645 | 1015 | -- | 390 | 530 | 820 | -- | 350 | 475 | 735 | -- | 330 | 445 | 690 |
| C | -- | -- | 415 | 640 | -- | -- | 340 | 525 | -- | -- | -- | 470 | -- | -- | -- | 445 |
| D | -- | -- | -- | 410 | -- | -- | -- | 335 | -- | -- | -- | -- | -- | -- | -- | -- |

h/d ≥ 1* - Refer to Note 5 for definition of h and d.

| Wind Region | Building Height – H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------------|-----------------|-------------|------------|------------|-----------------|------------|-------------|------------|-----------------|------------|-------------|------------|-----------------|------------|
| | H ≤ 5 | | | | 5 < H ≤ 10 | | | | 10 < H ≤ 15 | | | | 15 < H ≤ 20 | | | |
| | Corner | Edge | Interme date | Internal | Corner | Edge | Interme date | Internal | Corner | Edge | Interme date | Internal | Corner | Edge | Interme date | Internal |
| A | -- | 480 | 655 | 1030 | -- | 395 | 535 | 830 | -- | 355 | 480 | 745 | -- | 335 | 455 | 705 |
| B | -- | 230 | 435 | 675 | -- | -- | 355 | 550 | -- | -- | 230 | 495 | -- | -- | -- | 465 |
| C | -- | -- | -- | 435 | -- | -- | -- | 355 | -- | -- | -- | 220 | -- | -- | -- | -- |
| D | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

*For intermediate values of h/d ratios, linear interpolation shall be used.
 *Refer to Note 7- Figure 2 for roof zone definition.

**Flush Array Frame System Spacing Table for
 LYSAGHT Longline 305 roof sheeting – mm**

Type of Roof: LYSAGHT Longline 305
 Type of Rail: MA Rail
 Type of Interface: Mibet Roof Clamp Longline 305
 Solar Panel Dimension: 1.97mx1m
 Terrain category: 3

h/d ≤ 0.5* - Refer to Note 5 for definition of h and d.

| Wind Region | Building Height – H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------------|-----------------|-------------|------------|------------|-----------------|-------------|-------------|------------|-----------------|-------------|-------------|------------|-----------------|-------------|
| | H ≤ 5 | | | | 5 < H ≤ 10 | | | | 10 < H ≤ 15 | | | | 15 < H ≤ 20 | | | |
| | Corner | Edge | Interme date | Internal | Corner | Edge | Interme date | Internal | Corner | Edge | Interme date | Internal | Corner | Edge | Interme date | Internal |
| A | 565 | 875 | 1210 | 1910 | 565 | 875 | 1210 | 1910 | 485 | 750 | 1035 | 1655 | 435 | 665 | 915 | 1455 |
| B | 375 | 575 | 790 | 1245 | 375 | 575 | 790 | 1245 | 285 | 500 | 680 | 1065 | -- | 445 | 605 | 940 |
| C | -- | 375 | 505 | 785 | -- | 375 | 505 | 785 | -- | 220 | 435 | 670 | -- | -- | 385 | 595 |
| D | -- | -- | 230 | 495 | -- | -- | 230 | 495 | -- | -- | -- | 430 | -- | -- | -- | 380 |

h/d ≥ 1* - Refer to Note 5 for definition of h and d.

| Wind Region | Building Height – H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------------|-----------------|-------------|------------|------------|-----------------|-------------|-------------|------------|-----------------|-------------|-------------|------------|-----------------|------------|
| | H ≤ 5 | | | | 5 < H ≤ 10 | | | | 10 < H ≤ 15 | | | | 15 < H ≤ 20 | | | |
| | Corner | Edge | Interme date | Internal | Corner | Edge | Interme date | Internal | Corner | Edge | Interme date | Internal | Corner | Edge | Interme date | Internal |
| A | 380 | 585 | 800 | 1265 | 380 | 585 | 800 | 1265 | 325 | 505 | 685 | 1075 | -- | 450 | 610 | 955 |
| B | -- | 390 | 530 | 825 | -- | 390 | 530 | 825 | -- | 335 | 455 | 705 | -- | -- | 405 | 625 |
| C | -- | -- | 345 | 525 | -- | -- | 345 | 525 | -- | -- | -- | 450 | -- | -- | -- | 405 |
| D | -- | -- | -- | 335 | -- | -- | -- | 335 | -- | -- | -- | -- | -- | -- | -- | -- |

*For intermediate values of h/d ratios, linear interpolation shall be used.
 *Refer to Note 7- Figure 2 for roof zone definition.

**Flush Array Frame System Spacing Table for
 LYSAGHT Longline 305 roof sheeting – mm**

Type of Roof: LYSAGHT Longline 305
 Type of Rail: MA Rail
 Type of Interface: Mibet Roof Clamp Longline 305
 Solar Panel Dimension: 2.1mx1.05m
 Terrain category: 2

h/d ≤ 0.5* - Refer to Note 5 for definition of h and d.

| Wind Region | Building Height – H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|-------------|----------|------------|------|-------------|----------|-------------|------|-------------|----------|-------------|------|-------------|----------|
| | H ≤ 5 | | | | 5 < H ≤ 10 | | | | 10 < H ≤ 15 | | | | 15 < H ≤ 20 | | | |
| | Corner | Edge | Intermedate | Internal | Corner | Edge | Intermedate | Internal | Corner | Edge | Intermedate | Internal | Corner | Edge | Intermedate | Internal |
| A | 435 | 670 | 925 | 1475 | 355 | 545 | 750 | 1180 | -- | 490 | 670 | 1055 | -- | 465 | 635 | 995 |
| B | -- | 445 | 605 | 950 | -- | 365 | 495 | 770 | -- | -- | 445 | 690 | -- | -- | 420 | 650 |
| C | -- | -- | 390 | 600 | -- | -- | -- | 490 | -- | -- | -- | 440 | -- | -- | -- | 415 |
| D | -- | -- | -- | 385 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

h/d ≥ 1* - Refer to Note 5 for definition of h and d.

| Wind Region | Building Height – H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|-------------|----------|------------|------|-------------|----------|-------------|------|-------------|----------|-------------|------|-------------|----------|
| | H ≤ 5 | | | | 5 < H ≤ 10 | | | | 10 < H ≤ 15 | | | | 15 < H ≤ 20 | | | |
| | Corner | Edge | Intermedate | Internal | Corner | Edge | Intermedate | Internal | Corner | Edge | Intermedate | Internal | Corner | Edge | Intermedate | Internal |
| A | -- | 450 | 615 | 965 | -- | 370 | 500 | 780 | -- | -- | 450 | 700 | -- | -- | 425 | 660 |
| B | -- | -- | 410 | 635 | -- | -- | 230 | 515 | -- | -- | -- | 465 | -- | -- | -- | 435 |
| C | -- | -- | -- | 405 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| D | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

*For intermediate values of h/d ratios, linear interpolation shall be used.
 *Refer to Note 7- Figure 2 for roof zone definition.

**Flush Array Frame System Spacing Table for
 LYSAGHT Longline 305 roof sheeting – mm**

Type of Roof: LYSAGHT Longline 305
 Type of Rail: MA Rail
 Type of Interface: Mibet Roof Clamp Longline 305
 Solar Panel Dimension: 2.1mx1.05m
 Terrain category: 3

h/d ≤ 0.5* - Refer to Note 5 for definition of h and d.

| Wind Region | Building Height – H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|-------------|----------|------------|------|-------------|----------|-------------|------|-------------|----------|-------------|------|-------------|----------|
| | H ≤ 5 | | | | 5 < H ≤ 10 | | | | 10 < H ≤ 15 | | | | 15 < H ≤ 20 | | | |
| | Corner | Edge | Intermedate | Internal | Corner | Edge | Intermedate | Internal | Corner | Edge | Intermedate | Internal | Corner | Edge | Intermedate | Internal |
| A | 525 | 820 | 1135 | 1845 | 525 | 820 | 1135 | 1845 | 455 | 705 | 970 | 1555 | 405 | 625 | 860 | 1370 |
| B | 350 | 540 | 740 | 1170 | 350 | 540 | 740 | 1170 | -- | 465 | 635 | 995 | -- | 415 | 565 | 880 |
| C | -- | 345 | 475 | 735 | -- | 345 | 475 | 735 | -- | -- | 405 | 630 | -- | -- | 365 | 560 |
| D | -- | -- | -- | 465 | -- | -- | -- | 465 | -- | -- | -- | 400 | -- | -- | -- | 355 |

h/d ≥ 1* - Refer to Note 5 for definition of h and d.

| Wind Region | Building Height – H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|-------------|----------|------------|------|-------------|----------|-------------|------|-------------|----------|-------------|------|-------------|----------|
| | H ≤ 5 | | | | 5 < H ≤ 10 | | | | 10 < H ≤ 15 | | | | 15 < H ≤ 20 | | | |
| | Corner | Edge | Intermedate | Internal | Corner | Edge | Intermedate | Internal | Corner | Edge | Intermedate | Internal | Corner | Edge | Intermedate | Internal |
| A | 355 | 550 | 750 | 1185 | 355 | 550 | 750 | 1185 | -- | 475 | 645 | 1010 | -- | 420 | 575 | 895 |
| B | -- | 365 | 495 | 770 | -- | 365 | 495 | 770 | -- | -- | 430 | 665 | -- | -- | 380 | 590 |
| C | -- | -- | -- | 495 | -- | -- | -- | 495 | -- | -- | -- | 425 | -- | -- | -- | 375 |
| D | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

*For intermediate values of h/d ratios, linear interpolation shall be used.
 *Refer to Note 7- Figure 2 for roof zone definition.

**Flush Array Frame System Spacing Table for
 LYSAGHT Longline 305 roof sheeting – mm**

Type of Roof: LYSAGHT Longline 305
 Type of Rail: MA Rail
 Type of Interface: Mibet Roof Clamp Longline 305
 Solar Panel Dimension: 2.2mx1.2m
 Terrain category: 2

h/d ≤ 0.5* - Refer to notes for definition of h and d.

| Wind Region | Building Height – H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|------------------|----------|------------|------|------------------|----------|-------------|------|------------------|----------|-------------|------|------------------|----------|
| | H ≤ 5 | | | | 5 < H ≤ 10 | | | | 10 < H ≤ 15 | | | | 15 < H ≤ 20 | | | |
| | Corner | Edge | Interme diate | Internal | Corner | Edge | Interme diate | Internal | Corner | Edge | Interme diate | Internal | Corner | Edge | Interme diate | Internal |
| A | 260 | 640 | 885 | 1410 | -- | 520 | 715 | 1130 | -- | 460 | 640 | 1005 | -- | 325 | 605 | 945 |
| B | -- | 425 | 580 | 905 | -- | -- | 475 | 735 | -- | -- | 425 | 660 | -- | -- | 400 | 620 |
| C | -- | -- | -- | 575 | -- | -- | -- | 465 | -- | -- | -- | 420 | -- | -- | -- | 395 |
| D | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

h/d ≥ 1* - Refer to Note 5 for definition of h and d.

| Wind Region | Building Height – H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|------------------|----------|------------|------|------------------|----------|-------------|------|------------------|----------|-------------|------|------------------|----------|
| | H ≤ 5 | | | | 5 < H ≤ 10 | | | | 10 < H ≤ 15 | | | | 15 < H ≤ 20 | | | |
| | Corner | Edge | Interme diate | Internal | Corner | Edge | Interme diate | Internal | Corner | Edge | Interme diate | Internal | Corner | Edge | Interme diate | Internal |
| A | -- | 310 | 590 | 920 | -- | -- | 475 | 745 | -- | -- | 310 | 665 | -- | -- | 235 | 630 |
| B | -- | -- | 365 | 605 | -- | -- | -- | 495 | -- | -- | -- | 445 | -- | -- | -- | 415 |
| C | -- | -- | -- | 265 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| D | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

*For intermediate values of h/d ratios, linear interpolation shall be used.

*Refer to Note 7- Figure 2 for roof zone definition.

**Flush Array Frame System Spacing Table for
 LYSAGHT Longline 305 roof sheeting – mm**

Type of Roof: LYSAGHT Longline 305
 Type of Rail: MA Rail
 Type of Interface: Mibet Roof Clamp Longline 305
 Solar Panel Dimension: 2.2mx1.2m
 Terrain category: 3

h/d ≤ 0.5* - Refer to notes for definition of h and d.

| Wind Region | Building Height – H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|------------------|----------|------------|------|------------------|----------|-------------|------|------------------|----------|-------------|------|------------------|----------|
| | H ≤ 5 | | | | 5 < H ≤ 10 | | | | 10 < H ≤ 15 | | | | 15 < H ≤ 20 | | | |
| | Corner | Edge | Interme diate | Internal | Corner | Edge | Interme diate | Internal | Corner | Edge | Interme diate | Internal | Corner | Edge | Interme diate | Internal |
| A | 505 | 785 | 1085 | 1765 | 505 | 785 | 1085 | 1765 | 310 | 670 | 925 | 1480 | -- | 595 | 820 | 1305 |
| B | -- | 515 | 705 | 1115 | -- | 515 | 705 | 1115 | -- | 445 | 605 | 950 | -- | 395 | 540 | 840 |
| C | -- | -- | 450 | 700 | -- | -- | 450 | 700 | -- | -- | 280 | 600 | -- | -- | -- | 535 |
| D | -- | -- | -- | 445 | -- | -- | -- | 445 | -- | -- | -- | 265 | -- | -- | -- | -- |

h/d ≥ 1* - Refer to Note 5 for definition of h and d.

| Wind Region | Building Height – H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|------------------|----------|------------|------|------------------|----------|-------------|------|------------------|----------|-------------|------|------------------|----------|
| | H ≤ 5 | | | | 5 < H ≤ 10 | | | | 10 < H ≤ 15 | | | | 15 < H ≤ 20 | | | |
| | Corner | Edge | Interme diate | Internal | Corner | Edge | Interme diate | Internal | Corner | Edge | Interme diate | Internal | Corner | Edge | Interme diate | Internal |
| A | -- | 525 | 715 | 1135 | -- | 525 | 715 | 1135 | -- | 340 | 615 | 965 | -- | -- | 545 | 855 |
| B | -- | -- | 475 | 735 | -- | -- | 475 | 735 | -- | -- | 410 | 635 | -- | -- | -- | 560 |
| C | -- | -- | -- | 470 | -- | -- | -- | 470 | -- | -- | -- | 405 | -- | -- | -- | -- |
| D | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

*For intermediate values of h/d ratios, linear interpolation shall be used.

*Refer to Note 7- Figure 2 for roof zone definition.

**Flush Array Frame System Spacing Table for
 LYSAGHT Longline 305 roof sheeting – mm**

Type of Roof: LYSAGHT Longline 305
 Type of Rail: MA Rail
 Type of Interface: Mibet Roof Clamp Longline 305
 Solar Panel Dimension: 2.4mx1.2m
 Terrain category: 2

h/d ≤ 0.5* - Refer to Note 5 for definition of h and d.

| Wind Region | Building Height – H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|------------------|----------|------------|------|------------------|----------|-------------|------|------------------|----------|-------------|------|------------------|----------|
| | H ≤ 5 | | | | 5 < H ≤ 10 | | | | 10 < H ≤ 15 | | | | 15 < H ≤ 20 | | | |
| | Corner | Edge | Interme diate | Internal | Corner | Edge | Interme diate | Internal | Corner | Edge | Interme diate | Internal | Corner | Edge | Interme diate | Internal |
| A | -- | 590 | 810 | 1290 | -- | 475 | 655 | 1035 | -- | 310 | 585 | 920 | -- | 235 | 555 | 865 |
| B | -- | 340 | 530 | 830 | -- | -- | 435 | 675 | -- | -- | 340 | 605 | -- | -- | -- | 565 |
| C | -- | -- | -- | 525 | -- | -- | -- | 430 | -- | -- | -- | 265 | -- | -- | -- | -- |
| D | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

h/d ≥ 1* - Refer to Note 5 for definition of h and d.

| Wind Region | Building Height – H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|------------------|----------|------------|------|------------------|----------|-------------|------|------------------|----------|-------------|------|------------------|----------|
| | H ≤ 5 | | | | 5 < H ≤ 10 | | | | 10 < H ≤ 15 | | | | 15 < H ≤ 20 | | | |
| | Corner | Edge | Interme diate | Internal | Corner | Edge | Interme diate | Internal | Corner | Edge | Interme diate | Internal | Corner | Edge | Interme diate | Internal |
| A | -- | -- | 540 | 845 | -- | -- | 325 | 685 | -- | -- | -- | 610 | -- | -- | -- | 575 |
| B | -- | -- | -- | 555 | -- | -- | -- | 450 | -- | -- | -- | 405 | -- | -- | -- | 265 |
| C | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| D | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

*For intermediate values of h/d ratios, linear interpolation shall be used.
 *Refer to Note 7- Figure 2 for roof zone definition.

**Flush Array Frame System Spacing Table for
 LYSAGHT Longline 305 roof sheeting – mm**

Type of Roof: LYSAGHT Longline 305
 Type of Rail: MA Rail
 Type of Interface: Mibet Roof Clamp Longline 305
 Solar Panel Dimension: 2.4mx1.2m
 Terrain category: 3

h/d ≤ 0.5* - Refer to Note 5 for definition of h and d.

| Wind Region | Building Height – H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|------------------|----------|------------|------|------------------|----------|-------------|------|------------------|----------|-------------|------|------------------|----------|
| | H ≤ 5 | | | | 5 < H ≤ 10 | | | | 10 < H ≤ 15 | | | | 15 < H ≤ 20 | | | |
| | Corner | Edge | Interme diate | Internal | Corner | Edge | Interme diate | Internal | Corner | Edge | Interme diate | Internal | Corner | Edge | Interme diate | Internal |
| A | 460 | 720 | 995 | 1615 | 460 | 720 | 995 | 1615 | -- | 615 | 845 | 1360 | -- | 545 | 750 | 1195 |
| B | -- | 475 | 645 | 1020 | -- | 475 | 645 | 1020 | -- | 410 | 555 | 870 | -- | -- | 495 | 770 |
| C | -- | -- | 415 | 640 | -- | -- | 415 | 640 | -- | -- | -- | 550 | -- | -- | -- | 490 |
| D | -- | -- | -- | 405 | -- | -- | -- | 405 | -- | -- | -- | -- | -- | -- | -- | -- |

h/d ≥ 1* - Refer to Note 5 for definition of h and d.

| Wind Region | Building Height – H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|------------------|----------|------------|------|------------------|----------|-------------|------|------------------|----------|-------------|------|------------------|----------|
| | H ≤ 5 | | | | 5 < H ≤ 10 | | | | 10 < H ≤ 15 | | | | 15 < H ≤ 20 | | | |
| | Corner | Edge | Interme diate | Internal | Corner | Edge | Interme diate | Internal | Corner | Edge | Interme diate | Internal | Corner | Edge | Interme diate | Internal |
| A | -- | 480 | 655 | 1040 | -- | 480 | 655 | 1040 | -- | 270 | 565 | 885 | -- | -- | 500 | 785 |
| B | -- | -- | 435 | 675 | -- | -- | 435 | 675 | -- | -- | -- | 580 | -- | -- | -- | 515 |
| C | -- | -- | -- | 430 | -- | -- | -- | 430 | -- | -- | -- | -- | -- | -- | -- | -- |
| D | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

*For intermediate values of h/d ratios, linear interpolation shall be used.
 *Refer to Note 7- Figure 2 for roof zone definition.

General Notes

Note 1 Following components are satisfied to use according to AS/NZS 1170.2-2011(R2016)

| Components | Part number | Comments |
|----------------------|---------------------------------|-----------------------------------|
| Inter Clamp Kit (MA) | Inter Clamp Kit (MA) | as per drawing provided by client |
| End Clamp Kit (MA) | End Clamp Kit (MA) | as per drawing provided by client |
| Roof Clamp | Mibet Roof Clamp – Longline 305 | as per drawing provided by client |
| MA Rail | MA Rail | as per drawing provided by client |

Note 2 Maximum uplift wind pressure is limited to 5 kPa. -- states more uplift pressure.

Note 3 Deflection is limited to Minimum of L/120 and 15mm

Note 4 Terrain Category 2 (TC2) refers to open terrain, including grassland, with well-scattered obstructions having heights generally from 1.5 m to 5 m, with no more than two obstructions per hectare, e.g. farmland and cleared subdivisions with isolated trees and uncut grass.
 Terrain Category 3 (TC3) refers to terrain with numerous closely spaced obstructions having heights generally from 3 m to 10 m. The minimum density of obstructions shall be at least the equivalent of 10 house-size obstructions per hectare, e.g. suburban housing, light industrial estates or dense forests.

Note 5 Refer to Figure 1 for definition of h and d.

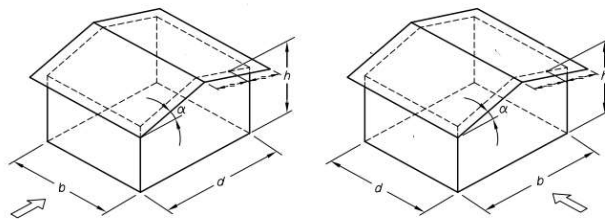
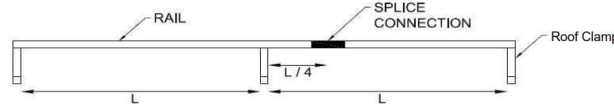


Figure 1 – h and d definition

Note 6 The optimised location of rail splice connection is at quarter length of the spacing of the interface. No Splice connection should be placed at the centre of spacing or over the interface.



Note 7 Refer Figure 2 for definition of roof zones.

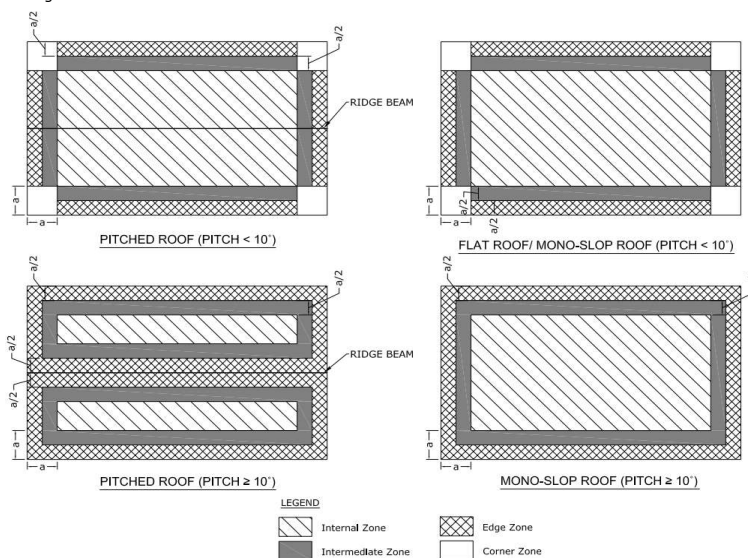


Figure 2 - Roof Zones Definition

In Figure 2, the value of dimension "a" is the minimum of 0.2b, 0.2d and h. (b & d are building dimensions and h is its height)